

15. Descriptions of five new Shells from the Island of Formosa and the Persian Gulf, and Notes upon a few known Species. By EDGAR A. SMITH, F.Z.S.

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(Plate XLVI.)

*MELANIA FORMOSENSIS.* (Plate XLVI. figs. 4 & 5.)

Shell elongate, subulate, olivaceous yellow, purer yellow beneath the whorls, marked with longitudinal, undulating, more or less interrupted and broken flammules of a dark brown colour, at the top of the whorls forming conspicuous blotches, and at the base of the body-whorl with a broad blackish-brown band. Whorls 13, a little constricted at the upper part and submarginated and somewhat convex beneath, the first 9 or 10 obliquely costate and deeply transversely sulcate, the lowermost sulcus at the suture being particularly wide, forming a canalication, the last three whorls only spirally sulcate and striated by obliquely flexuous lines of growth; sulci narrower than the interstices, about 10 in the penultimate whorl and 24 in the last. Aperture ovate, acute superiorly, within of the same colour as the exterior, but clouded by a white enamel, the brown flammulation and spiral basal band being visible; columella white, oblique, but slightly arcuate.

Length 33 millim., diameter  $9\frac{1}{2}$ ; aperture  $9\frac{1}{2}$  long, 5 wide.

*Var.* In this variety the longitudinal plicæ extend as far as the penultimate whorl, and are even partially developed on the last.

*Hab.* Formosa (*Dickson*).

This species, which I feel much pleasure in naming after Mr. Matthew Dickson, has been liberally presented to the Museum by him, together with the other *Melaniæ* here described, and a numerous series of insects.

*MELANIA DICKSONI.* (Plate XLVI. fig. 6.)

Shell elongate, acuminate, shining, olivaceous yellow, purplish brown at the apex, with or without spiral brown bands. Whorls 8 or 9, moderately convex, the six upper ones almost smooth, only finely striated longitudinally by lines of growth, and also transversely, the last two with a few faint transverse keels or ridges. Aperture ovate, acuminate above, occupying nearly  $\frac{2}{3}$  of the entire length, white within, the brown bands of the exterior (when present) also visible. Lip thin, almost even, not prominent or sinuated; columella rather thickly callous in the umbilical region, and united to the lip above by a very thin callosity.

Length 21 millim., diameter 8; aperture  $8\frac{1}{2}$  long, 5 wide.

*Hab.* Formosa (*Dickson*).

This is a very remarkable species, and looks more like a North-American than an Eastern form.

The brown transverse bands are present in five out of the six spe-

cimens presented to the Museum by Mr. Dickson. There are two on the penultimate whorl, one at its base, and one a little above the middle. On the body-whorl there are three, the two upper ones being continuous with those on the preceding volution, and the third at the base.

MELANIA OBLIQUIGRANOSA. (Plate XLVI. figs. 7 & 8.)

Shell elongately ovate, acuminate above, of a dirty yellowish colour, and usually coated with a black earthy deposit; spire acutely conical, with straight outlines; whorls 9-10, turreted, quite flat, obliquely plicated and spirally ridged, with nodules at the point of contact of the plicæ with the ridges; on the whorls of the spire the ridges are four in number, the granules on the uppermost one a little larger than those on the three lower ones. Body-whorl almost flat above the middle; at that point and beneath somewhat convex, encircled by 11 or 12 transverse ridges, whereof 5 or 6 of the upper ones are granuliferous, the rest either uninterrupted or displaying an indication of oblong granulations. Aperture pyriform, acute superiorly, within of nearly the same colour as the exterior, but coated with a thin smooth callous deposit occupying about  $\frac{2}{5}$  of the entire length of the shell; columella considerably arcuated, at the middle white, united above to the lip by a very thin enamel on the whorl; lip thin, sinuated above and prominent below the middle.

Length 25 millim., diameter 8; aperture 10 long, 5 wide.

Var. *monstrosa*. Shell ovate; spire short; aperture more than half as long as the shell.

*Hab.* Formosa (*Dickson*).

This species may be recognized among the several allied forms from the Philippine Islands and other places by its very rectilinear acute spire and perfectly flat whorls. The uppermost series of granules is at a little distance beneath the sutural line; and from this circumstance the whorls have a turreted appearance. The nodules of this series are larger and fewer in number than those of the other series, and consequently do not quite regularly terminate the obsolete plicæ, upon which the other three granules are situated in an oblique direction. Some of the granules have a squarish form, others are transversely somewhat oblong; and most of them have the upper and lower margins rather straight, with the lateral edges less defined, but gradually blending off into the transverse ridges.

The colour of this species is pretty constantly uniform; one specimen, however, is marked with a few reddish dots towards the base, and these are most conspicuous within the aperture.

MELANIA TUBERCULATA, Müller. (Plate XLVI. fig. 9.)

*Hab.* Formosa (*Dickson*).

The shell here figured appears to be inseparable from this remarkably variable and widely distributed species.

MELANIA SUBPLICATULA. (Plate XLVI. fig. 10.)

Shell rather small, elongate, acuminate, eroded or truncate at the

apex, olive-brown, more or less coated with a black earthy deposit. Whorls probably about 9 in number, the remaining four or five slightly convex, spirally sulcate, and longitudinally sculptured with coarsish flexuous lines of growth; ridges between the sulci about 10 in the penultimate whorl and 18 in the last, those near the base separated by wider sulci than above. Aperture oval, acuminate superiorly and very slightly effuse at the base, occupying about  $\frac{1}{3}$  of the supposed entire length of the shell, sordid bluish within; lip very thin, broadly sinuated above and somewhat prominent below the middle. Columella whitish, moderately arcuate.

Supposed total length 23 millim.; actual length of five remaining whorls 19, diameter  $7\frac{1}{3}$ ; aperture  $7\frac{1}{3}$  long,  $4\frac{1}{3}$  wide.

*Hab.* Formosa (*Dickson*).

This species resembles *M. dolorosa*, Gould, to some extent; however, it is distinguishable on account of more elongated whorls and coarser spiral sulci. Some of the lines of growth here and there are well marked, and give the whorls a sublicated appearance.

**BULLIA PERSICA.** (Plate XLVI. fig. 11.)

Shell ovate-acuminate superiorly, greyish or lavender-colour, whitish at the upper part of the whorls, with the callous band at their base white, bordered below by a brown line at the suture; and the base or cauda of the last whorl is also white. Whorls 6, the first two smooth, convex, the rest spirally sulcated, the ridges between the sulci 8 in number in the upper whorls and about 16 in the last, whereof 12 are above and 4 below the acute ridge or keel, which winds round the lower portion of the whorl. Of these ridges the four immediately below the suture are more or less white, granulous through being crossed by oblique sulci, which only extend from the suture a short distance. Aperture deep brown within, with a paler or white border at the outer lip and over the basal sinus, and a little longer than the spire. Columella moderately arched, and coated with a thinnish white enamel. Basal sinus rather broad and deep.

Length 24 millim., diameter 10; aperture 12 long, 7 broad.

*Hab.* Bushire, Persian Gulf.

Two specimens of this very interesting species have recently been presented to the Museum by Mr. A. S. Betts. The peculiar form and colouring, the granular ridges at the upper part of the whorl, and the brown aperture with the white margin to the labrum and basal sinus are the most obvious distinguishing characters of the species.

**OSTREA, sp.,** adhering to *Trochus (Polydonta) maculatus*, Linn. (Plate XLVI. fig. 12.)

This is a remarkable instance in which a shell has assumed, to a certain extent, the sculpture of another to which it has adhered. This assumption or mimicry of the surface of other shells and foreign substances has already been noticed in other species of *Ostrea* and other genera, and is common to most forms of the genus *Myochama*. The same process which effects so remarkable a change in the normal

aspect of the latter, namely the moulding of the edges of the upper valve by the animal to the surface of the substance to which the shell is attached, no doubt, was employed by the Oyster here figured; for I do not think that this alteration of outward appearance has been in any way effected by contact of the tentacular cirri which proceed from the edge of the mantle of the *Trochus*, because if this were the case some alteration in colour would have been expected.

The lower valve is white both externally and within, and, being thin, does not conceal the granular surface of the *Trochus* upon which it rests. The upper valve is olive-green within, and smooth, with the exception of the pear-shaped muscular scar and a few small granules scattered all round the margin. The exterior is dark lilac, with six obscure brownish rays, most observable towards the margin, and terminating at the digitations or prolongations at the edge.

The lamellated surface, so common to the upper valves of most Oysters, is almost altogether obliterated, and only here and there traces of it are noticeable. The exterior is rather smooth, sub-angular, the indistinct granules arranged in series corresponding to those on the *Trochus*; and the suture dividing the last and the penultimate whorls, and a depression or sulcus round the middle of the former, are also reproduced. The specimen is in the collection of Mr. Carl Bock.

CYPRÆA PEASEI, Sowerby. (Plate XLVI. figs. 13 & 14.)

*Cypræa peasei*, Sowerby, Thesaurus Conchyl. iv. pl. 311. figs. 167, 168.

*Hab.* Mauritius. Coll. Carl Bock.

The shell here figured appears to be a monstrous growth of this species. The alteration of form and the obtuse ridges on the dorsal surface are suggestive of certain forms of the genus *Ovulum*.

#### CONUS PASTINACA.

Much uncertainty and confusion exists with regard to the determination of this Lamarckian species. The original description of it is so brief that it is absolutely impossible ever to know with certainty what species Lamarck really had before him, more especially as the actual type (which has been lost) was never figured by him, nor does he refer to any previously published figure. The shell described and delineated by Kiener (Coq. Viv. pl. 26. fig. 2) certainly cannot be the true *C. pastinaca*. The species there represented (unknown to me) is decidedly distinct. The character of the spire does not at all agree with Lamarck's description, which is as follows:—"spira obtusa, immaculata, submucronata;" and again in French: "à spire non tachée." Kiener's shell has a rather concavely elevated spire and fulvous blotches upon it.

Reeve's idea of *C. pastinaca*, figured (Conchol. Icon. i. pl. 46. fig. 257, copied by Sowerby, Thesaurus Conchyliorum, iii. pl. 201. fig. 353) from a specimen in the British Museum, is also an erroneous one. This shell I have very carefully examined, and unhesi-

tatingly pronounce it to be a bleached example of *C. virgo*; for in form and sculpture it is absolutely identical with certain specimens of that species, and differs only in colour. This variation may be due to bleaching; or it may possibly be an albino form. The purple base, which is so constant a character in this species, is traceable in a faint degree in Reeve's shell. He does not refer to this in his description; yet in the figure it has been represented by the artist.

The species figured by Weinkauff in Kuster's Conchilien-Cabinet, pl. 32. figs. 1 and 2, apparently is the same as or very closely allied to that depicted by Reeve.

In order to come to some decision in the matter, I communicated with Dr. Brot, of Geneva, asking him for information respecting Lamarck's species, as his types in Delessert's collection have recently been obtained by the museum of that city. Unfortunately, it appears that Lamarck's Cones are not marked as in other genera, but placed on tablets bearing the designation L. According to a catalogue of Delessert's collection, Dr. Brot informs me that there ought to be five specimens of *C. pastinaca*; but only four are now to be found; the fifth (possibly that figured by Kiener) had disappeared before the collection reached Geneva. Of the remaining four, three existed in Lamarck's cabinet. None of these, however, has the dimensions indicated by that author. Two are considered by Dr. Brot small specimens of *Conus quercinus*; for they are ornamented (indistinctly, however) with the fine thread-like brown lines which are characteristic of that species. The third shell he considers a diminutive specimen of that figured by Kiener; for it so resembles the figure, that at first he thought that it had been enlarged for Kiener's plate. Finally, the fourth specimen of *C. pastinaca*, which is not from Lamarck's collection, resembles the form figured by Reeve under this name. Thus it appears that, under the name of *C. pastinaca*, the Delessert collection contains three species, viz. the *C. pastinaca* of Kiener (young), that of Reeve, also young, and, lastly, two small specimens of *Conus quercinus*. The question which now has to be settled is this:—Is the specimen in Delessert's collection, which is similar to Reeve's figure, really the same species as that delineated? if not, may it not be the true *pastinaca*?

In the British Museum the shell which accords most closely with the Lamarckian diagnosis is a worn specimen of *C. tabidus*, Reeve, figured in the 'Conchologia Iconica' under the name of *C. hepaticus*, Kiener (Conch. Icon. Suppl. pl. viii. fig. 278).

#### EXPLANATION OF PLATE XLVI.

- Figs. 1, 2. *Tellina wroblewskyi*, p. 727.  
 3. *Trochus (Thalotia) yokohamensis*, p. 727.  
 4. *Melania formosensis*, p. 728.  
 5. — *formosensis*, var., p. 728.  
 6. — *dicksoni*, p. 728.  
 7. — *obliquigranosa*, p. 729.  
 8. — *obliquigranosa*, var., p. 729.  
 9. — *tuberculata*, p. 729.

Fig. 10. *Melania subplicatula*, p. 729.

11. *Bullia persica*, p. 730.

12. *Ostrea*, attached to a *Trochus*, whose character of sculpture it has assumed, p. 730.

13, 14. *Cypræa peasei*, var. *monstrosa*, p. 731.

16. Descriptions of some apparently new Species of Butterflies from New Ireland and New Britain, sent by the Rev. G. BROWN. By F. D. GODMAN and O. SALVIN.

[Received June 18, 1878.]

The five species described below form part of a collection just received from Mr. G. Brown. We are preparing a full report of this collection, which we hope to lay before the Society in the autumn. In the mean time we have thought it desirable to publish the following descriptions.

EUPLŒA ERIMAS.

♂. Exp. 3·7. Upper surface rich steel-blue, a large patch of bluish white on the primaries cut by the dark median nervure and its branches and by the nervules at the end of the cell; there is a dark triangular spot in the acute angle between the median nervule and its first branch; the inner margin of the primaries is strongly convex, and covers a brown patch on the secondaries; the secondaries have a whitish median band cut by the nervules, one section falling inside the cell; the inner edge of this band is deeply sinuated, as also is the outer edge to a less extent.

Beneath greenish black, the spots of the upper surface are much more broken up, that on the primaries being divided into eight separate portions, the largest of which lies just within the cell; that on the secondaries is broken into eleven portions, one of which occupies the end of the cell.

*Hab.* New Ireland.

*Obs.* Allied to *E. jessica* from the Fiji Islands, and more remotely to *E. eupator*, Hew., from Celebes. From the former it differs in having the markings on the upper surface bluish white instead of yellow, and the spot on the upper wing is not broken into two as shown in Mr. Butler's figure (Lep. Ex. pl. 8. fig. 3).

PIERIS MADETES.

♂. Exp. 3·5. Above uniform orange, apex and costa of primaries black.

Primaries beneath black, a large spot at the end of the cell and seven large elongated submarginal spots yellow; a pale yellowish patch spreads from the inner margin over the median branches to just within the cell; secondaries orange, base and outer margin black, the latter including a row of six large yellow spots; a large red spot between the costal and subcostal nervures near their origin.

♀. Exp. 3·8. Above, primaries black, a large yellowish spot at